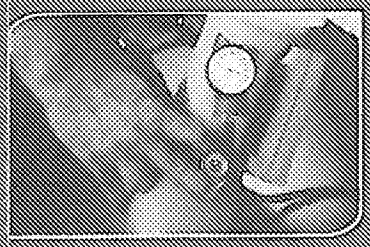
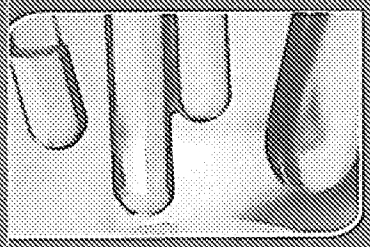
Annual Report 2001





protherics

Highlights

- Computer-aided Molecular Design business sold in July 2001 to Tularik for an approximate valuation (at 3 August 2001) of £6.3m in shares
- CroFab™ received FDA approval – launched in US market for spring 2001 snakebite season – generated £2.2m in revenue in first five months
- High blood pressure vaccine progressed to Phase II trials following encouraging results in initial human trials
- DigiFab™ under review by FDA with review expected to be completed in the autumn
- Revenue increased to £4.2m from £1.6m due to launch of CroFab™ in the US
- Loss before tax cut by 56% to £6.7m with administration expenses down 22% to £4.3m
- Cash balance of £3.2m at 31 March 2001 will be enhanced by the realisation of the CAMD sale proceeds

The sale of CAMD completed the reorganisation of Protherics. It is now a focused immunotherapeutics business with reduced costs, a stronger financial base and a good product pipeline. CroFab™ marked our first FDA product approval. We are optimistic that we will have our second product approved by the autumn this year - a real achievement for a company of this size.

In this, our first full year following the merger of Proteus and Therapeutic Antibodies we have defined our corporate strategy, focusing Protherics on the development of immunotherapeutics. In our later stage polyclonal antibody portfolio, we have now launched our first product, CroFab™, in the US. As described in the Financial Review, we have also more than halved our loss for the year, achieving both significant revenue increases and cost reductions.

Divesting CAMD

The different demands of early stage research and clinical development led to our decision to divest our computer aided molecular design division (CAMD) division. The success of the CAMD division's collaboration with Eli Lilly and Company along with other contract agreements contributed to a successful outcome. CAMD has been acquired by Tularik Inc. ("Tularik") a US biopharmaceutical company with a $1.1 billion market capitalisation, for the approximate equivalent (at 3 August 2001) of £6.3 million in shares. The divestment will also reduce expenses, which, in the financial year under review, amounted to approximately £2.5 million net of revenues. We wish our colleagues well in their new home.

FDA approval and US launch

CroFab™ was approved by the US Food and Drug Administration (FDA) in October 2000 and launched for the 2001 spring snakebite season. The product has been very well received by physicians, offering the first new treatment for rattlesnake bites for 50 years, and the continuing lack of availability of competitor product due to manufacturing difficulties has also boosted its take up. In the period from November 2000 to 31 March 2001, revenue of £2.2 million has been generated from this product.

Two FDA approvals planned within a year

Our second product, DigiFab™, is under active review by the FDA. The review process should be completed by the autumn of this year. Thus, Protherics could achieve two product approvals in the US marketplace within a year, a remarkable achievement for a small biopharmaceutical company. This demonstrates the strength of Protherics' clinical and regulatory capability in the world's largest pharmaceutical market.

FDA and MCA approved manufacturing

Protherics' manufacturing plant is FDA and MCA approved. This facility is now a revenue generating asset, and our efforts going forward are focused on reducing our cost of goods as we expand production. Our earlier stage vaccine products are now requiring manufacturing capability, thus spreading our technology risk.

A vaccine for high blood pressure (angiotensin vaccine)

In November 2000, we announced the results of our first trial in man with our vaccine for high blood pressure. Unusually at this early stage, an effect on blood pressure was seen in healthy volunteers. These very encouraging early results augur well for this unique product. High blood pressure represents the largest single pharmaceutical market, valued in excess of $30 billion per annum.

BSE diagnostic test

The BSE test based on our technology and developed by Enfer Scientific Limited ("Enfer") is now earning revenues at a rate of £1 million per annum for Protherics. Enfer recently announced a marketing agreement with Abbott Laboratories ("Abbott"). We believe that this agreement, with one of the world's foremost diagnostic companies, will rapidly expand the penetration of the test beyond Ireland and into Europe.

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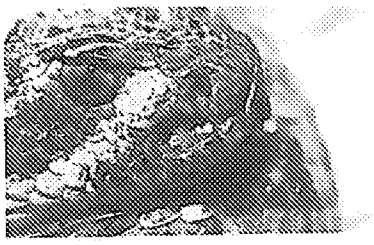
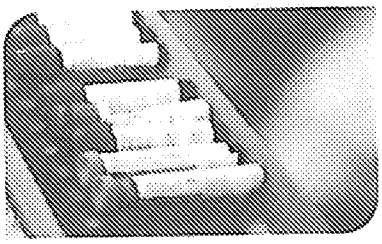
Stuart Walker
Chairman

Product Portfolio – Human Pharmaceuticals

Product	Principal uses	Status	Licensee/partner	Progress/Milestones
PRODUCTS LAUNCHED				
CroFab™ antivenin	Rattlesnake	Approved by FDA October 2000 - Launched Q1 calendar year 2001	Altana (US)	Market estimated at $[illegible]m plus
ViperaTab® antivenin	Common adder	On market on named patient basis	Swedish Orphan (Scandinavia)	Expansion of sales to European Union
PRODUCTS UNDER REGULATORY REVIEW				
DigiFab™	Reversal of digoxin toxicity	Product licence application submitted in US	Marketed by Altana in US Swedish Orphan (Scandinavia) F H Faulding (Australia/SE Asia)	FDA review to be completed Q3 calendar year 2001 Launch fall 2001
PRODUCTS IN CLINICAL TRIALS				
Angiotensin Immunotherapeutic	Hypertension	Phase II	To be determined	Results of first Phase IIb trial - late 2001
GnRH Human Vaccine	Prostate cancer	Phase II	ML Laboratories	Commercial viability of programme under review by ML
CytoTab™	Treatment of sepsis	Phase IIb	To be determined	Agreement with strategic partner
PRODUCTS IN RESEARCH				
Anti-metastasis immunotherapeutic	Cancer therapy	Research/proof of principle	n/a	Proof of principle in cancer model
Anti-nephropathy immunotherapeutic	Kidney failure	Research	n/a	Proof of immunogenicity
OTHER PRODUCTS				
Bovine Spongiform Encephalopathy test (BSE) Diagnostic Test	Detection of BSE in carcasses	Launched	Enfer Scientific	Enfer Abbott marketing agreement expands commercial opportunity
GnRH Animal Vaccine	Animal castration	Phase II	Janssen Animal Health	Continued development under review with partner



CroFab™, the rattlesnake antivenom, is a major opportunity for revenue growth which an estimated market of $40 million p.a.



Portfolio Review - Marketed products

CroFab™

CroFab™ was approved by the FDA last autumn and launched by our partner Altana Inc. ("Altana") in time for the spring snakebite 'season' this year. The product has been extremely well received, meeting a need by physicians for a safe and effective therapy. We believe that the safety profile of CroFab™ will enable us to expand the market for this product, treating more patients earlier following a bite than has been the practice with existing treatment. We estimate this market to be in excess of $40 million. CroFab™'s early success bodes well for the future, and we are making the necessary capital investment in our Welsh facility to meet expected market demand and lower our cost of goods.

ViperaTab®

ViperaTab® is now well established in Scandinavia as the treatment of choice for the management of European Adder (V.berus) bites. Sold on a named patient basis, we intend to broaden ViperaTab® use into the European Union for the management of other species of adder bites.

Products under Regulatory Review

DigiFab™

DigiFab™ is a treatment for digoxin overdose. Digoxin is widely prescribed for the treatment of cardiac conditions. It has a narrow therapeutic range and the drug can cause life-threatening toxicity when the range is exceeded. Protherics is now in the final stages of regulatory review with the FDA, with an approval targeted for the third quarter of 2001, and launch in the US planned by the end of this year. There is one other similar product on the market in the US, which represents the major part of the global market. Protherics will market this niche product in the US through our partner, Altana. We believe that with a production cost advantage we will be able to make inroads into the $20 million US market opportunity. DigiFab™ is a significant product for Protherics, spreading our fixed manufacturing costs across a second product and thereby improving our margins.

Products in Clinical Trials

Angiotensin Immunotherapeutic

Angiotensin II is a peptide hormone which plays an important role in the control of blood pressure. It is formed from a slightly larger peptide, angiotensin I, by the action of an enzyme, the angiotensin converting enzyme ("ACE"). Drugs that prevent the action of this enzyme (ACE inhibitors) were discovered in the late 1970's and have become market leaders in the treatment of high blood pressure and heart failure. More recently, drugs that block the action of angiotensin II have been developed and marketed and these appear to be as effective as ACE inhibitors in those indications. A number of treatments exist for the control of high blood pressure, including those which target angiotensin. However, these treatments require the patient to take tablets on a daily basis and the failure to do so is one of the major reasons for the poor control of blood pressure.

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severely affected cases. However a large amount of Fab fragments is required to treat a patient with InFab®, and thus, the investment in manufacturing scale up required is too great to make this project commercially viable.

Research in Progress

Two new vaccine research projects have been initiated. The first is aimed at developing a vaccine to combat the metastatic spread of cancer. The target molecule is well established and its mechanism of action validated in tumour spread. Inhibition of the molecule should therefore be effective in slowing the spread of cancer.

Studies on this vaccine have demonstrated high antibody levels in rats, and proof of concept studies are in progress in a model of cancer spread, with results expected by the end of the calendar year.

The second vaccine currently in research is at an earlier stage. The target molecule has been implicated in kidney failure, and current studies are designed to investigate the antibody response our vaccine constructs are intended to produce.

Opportunities

BSE diagnostic test

During this past year we have seen increasing concern about the health of livestock across Europe. The recent foot and mouth crisis in the UK has been accompanied by continued concern with respect to BSE, commonly known as "mad cow disease". Protherics has licensed its intellectual property in transmittable spongiform encephalopathy, or "TSE", diagnosis to Enfer for application in the worldwide development and marketing of a test to determine whether beef carcasses are infected by BSE. Enfer has developed a high throughput test and established a dedicated laboratory and logistic support to provide a testing service on beef carcasses in the slaughterhouse, prior to release of the carcasses into the food chain.

In March 2001, Enfer announced an agreement with Abbott, whereby Abbott will market the Enfer test in all territories outside Ireland. This deal, with one of the world's premium diagnostic companies, enables the Enfer test to compete in the broader European markets. Currently, all animals over 30 months entering the food chain are to be tested, with an estimated 30 million carcasses per year being slaughtered in Europe. The Protherics/Enfer test is the quickest test of the three tests validated by the European Commission. Protherics will retain 8% of Enfer's net sales revenue from Abbott.

GnRH Animal Vaccine

The GnRH hormone has the same structure and overall function in humans and animals and, therefore, the same approach to block its effects is applicable to both human and animal applications. In animal health and husbandry, the potential applications encompass fertility and behaviour control and improvement in meat quality.

Protherics has entered into a licensing agreement with Janssen to develop a GnRH Animal Vaccine. Janssen is responsible for the manufacture of both the active ingredient and any formulated vaccines. Janssen has studied the GnRH Animal Vaccine across a range of target species, in particular for feline castration. The development program has demonstrated proof of concept in cats. The program is under commercial review by our partner, Janssen.

PolongaTab and EchiTab

Protherics has succeeded in a technology transfer, outlicensing these products to a third party. This enables the continued development of these products for applications in third world countries.

Conclusion

The excitement amongst physicians following the launch of our first product, CroFab™, has been extremely encouraging. Taking CroFab™ from concept to approval is a significant achievement which, together with DigiFab™, will provide a solid foundation from which to build a profitable biotechnology franchise. The sale of our CAMD division will provide working capital for the near to medium term and, as importantly, focusses our research and commercial efforts.

I thank you, our shareholders, for your patience and support. We have an overriding goal – value for our shareholders – and believe that the achievements of this past year provide an excellent platform for the coming year.

Andrew J Heath
Chief Executive Officer

Financial Review

Turnover for the year increased to £4.2 million from £1.6 million in the prior year, following the commencement of CroFab™ supply in November 2000. The loss before tax for the year decreased to £6.7 million from £15.5 million (which included £1.9 million relating to merger costs).

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Research and development expenditure has decreased to £1.9 million from £9.0 million, as a result of the significant rationalisation referred to above, and the FDA approval of CroFab™.

This approval also resulted in the re-instatement of stock amounting to £1.3 million which was previously charged as a research and development cost. With CroFab™ now being manufactured and sold commercially, cost of goods sold has increased to £4.0 million from £0.1 million in the prior year.

Following the issue of £5.2 million (net) convertible debentures at the beginning of the financial year, and a share placement raising £3.0 million (net) at the end of January 2001, the Group finished the year with cash reserves of £3.2 million. Cash outflow from operating activities reduced to £6.0 million from £12.7 million in the prior year. This underlines our commitment to reducing cash burn and creating a strong and stable biopharmaceutical business.

Existing cash reserves, together with expected product revenues and the proceeds from the sale of the shares in Tularik, received from the sale of our CAMD operation, should provide sufficient working capital for the forseeable future.

Barry M Riley
Finance Director